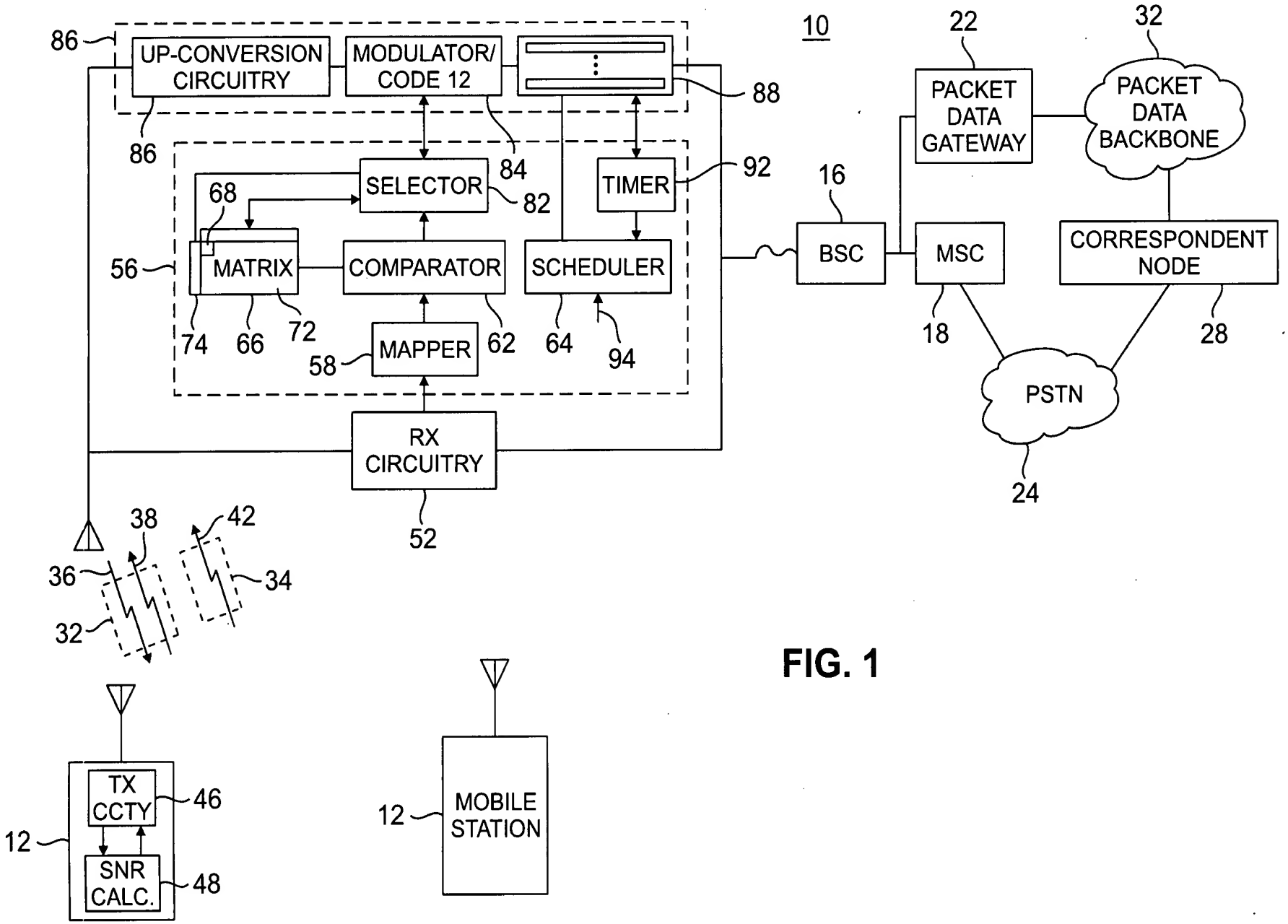
10
86
UP-CONVERSION CIRCUITRY
MODULATOR/ CODE 12
88
86
84
SELECTOR
82
TIMER
92
68
56
MATRIX
COMPARATOR
SCHEDULER
74
66
72
MAPPER
58
62
64
94
RX CIRCUITRY
52
38
42
36
34
32
22
PACKET DATA GATEWAY
32
PACKET DATA BACKBONE
16
BSC
MSC
CORRESPONDENT NODE
18
28
PSTN
24
TX CCTY
46
12
SNR CALC.
48
12
MOBILE STATION

FIG. 1

72

76 74 68

	MCS 1	MCS 2	• • •	MCS j	• • •	MCS L
1 CODE CHANNEL	T_{11}	T_{12}	• • •	T_{1j}	• • •	T_{1L}
2 CODE CHANNELS	T_{21}	T_{22}	• • •	T_{2j}	• • •	T_{2L}
□	□	□	□	□	□	□
i CODE CHANNELS	T_{i1}	T_{i2}	• • •	T_{ij}	• • •	T_{iL}
□	□	□	□	□	□	□
k CODE CHANNELS	T_{k1}	T_{k2}	• • •	T_{kj}	• • •	T_{kL}

FIG. 2

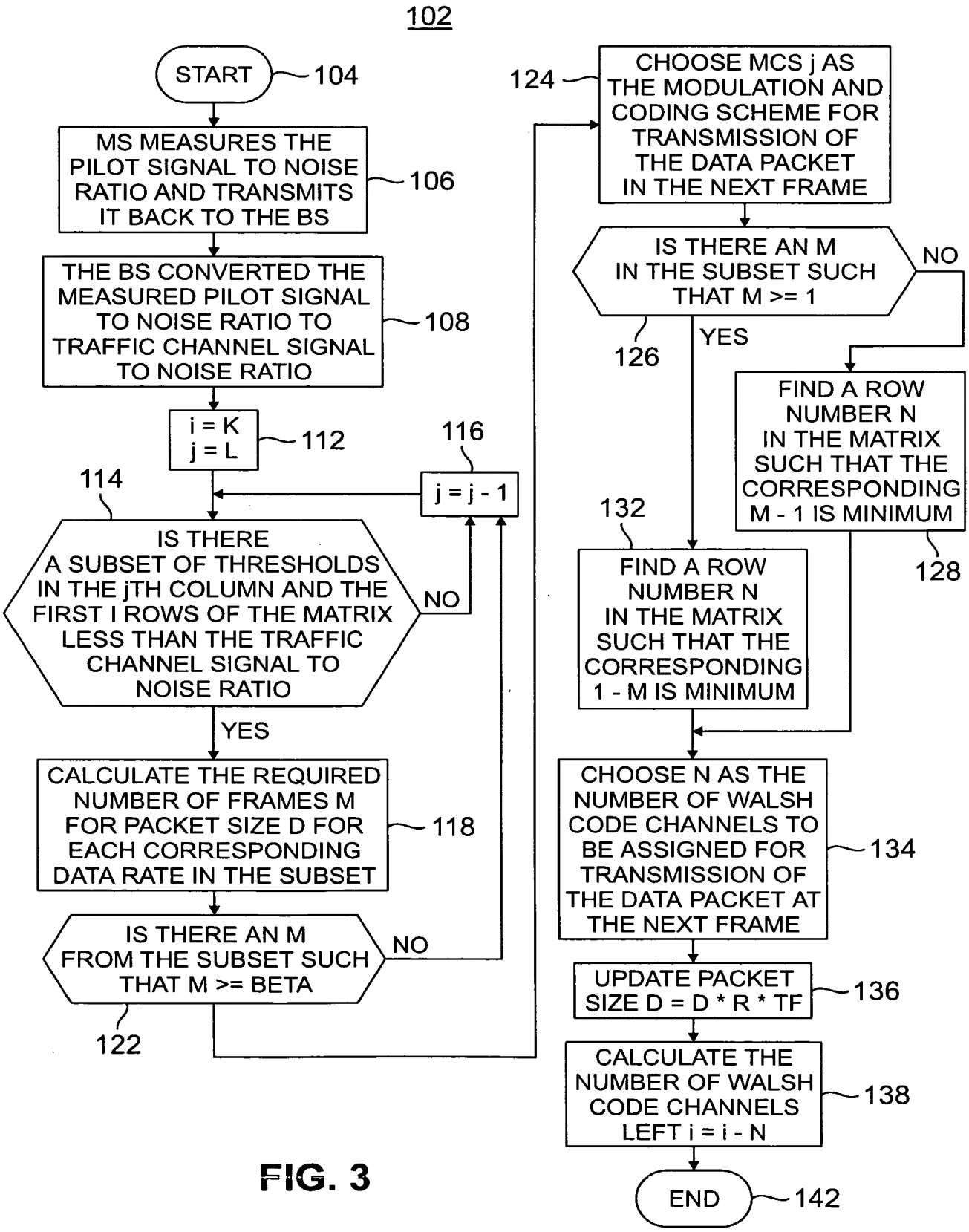
102
START
104
MS MEASURES THE PILOT SIGNAL TO NOISE RATIO AND TRANSMITS IT BACK TO THE BS
106
THE BS CONVERTED THE MEASURED PILOT SIGNAL TO NOISE RATIO TO TRAFFIC CHANNEL SIGNAL TO NOISE RATIO
108
i = K
j = L
112
116
j = j - 1
114
IS THERE A SUBSET OF THRESHOLDS IN THE jTH COLUMN AND THE FIRST I ROWS OF THE MATRIX LESS THAN THE TRAFFIC CHANNEL SIGNAL TO NOISE RATIO
NO
YES
CALCULATE THE REQUIRED NUMBER OF FRAMES M FOR PACKET SIZE D FOR EACH CORRESPONDING DATA RATE IN THE SUBSET
118
IS THERE AN M FROM THE SUBSET SUCH THAT M >= BETA
NO
122
124
CHOOSE MCS j AS THE MODULATION AND CODING SCHEME FOR TRANSMISSION OF THE DATA PACKET IN THE NEXT FRAME
IS THERE AN M IN THE SUBSET SUCH THAT M >= 1
NO
126
YES
FIND A ROW NUMBER N IN THE MATRIX SUCH THAT THE CORRESPONDING M - 1 IS MINIMUM
128
132
FIND A ROW NUMBER N IN THE MATRIX SUCH THAT THE CORRESPONDING 1 - M IS MINIMUM
CHOOSE N AS THE NUMBER OF WALSH CODE CHANNELS TO BE ASSIGNED FOR TRANSMISSION OF THE DATA PACKET AT THE NEXT FRAME
134
UPDATE PACKET SIZE D = D * R * TF
136
CALCULATE THE NUMBER OF WALSH CODE CHANNELS LEFT i = i - N
138
END
142

FIG. 3

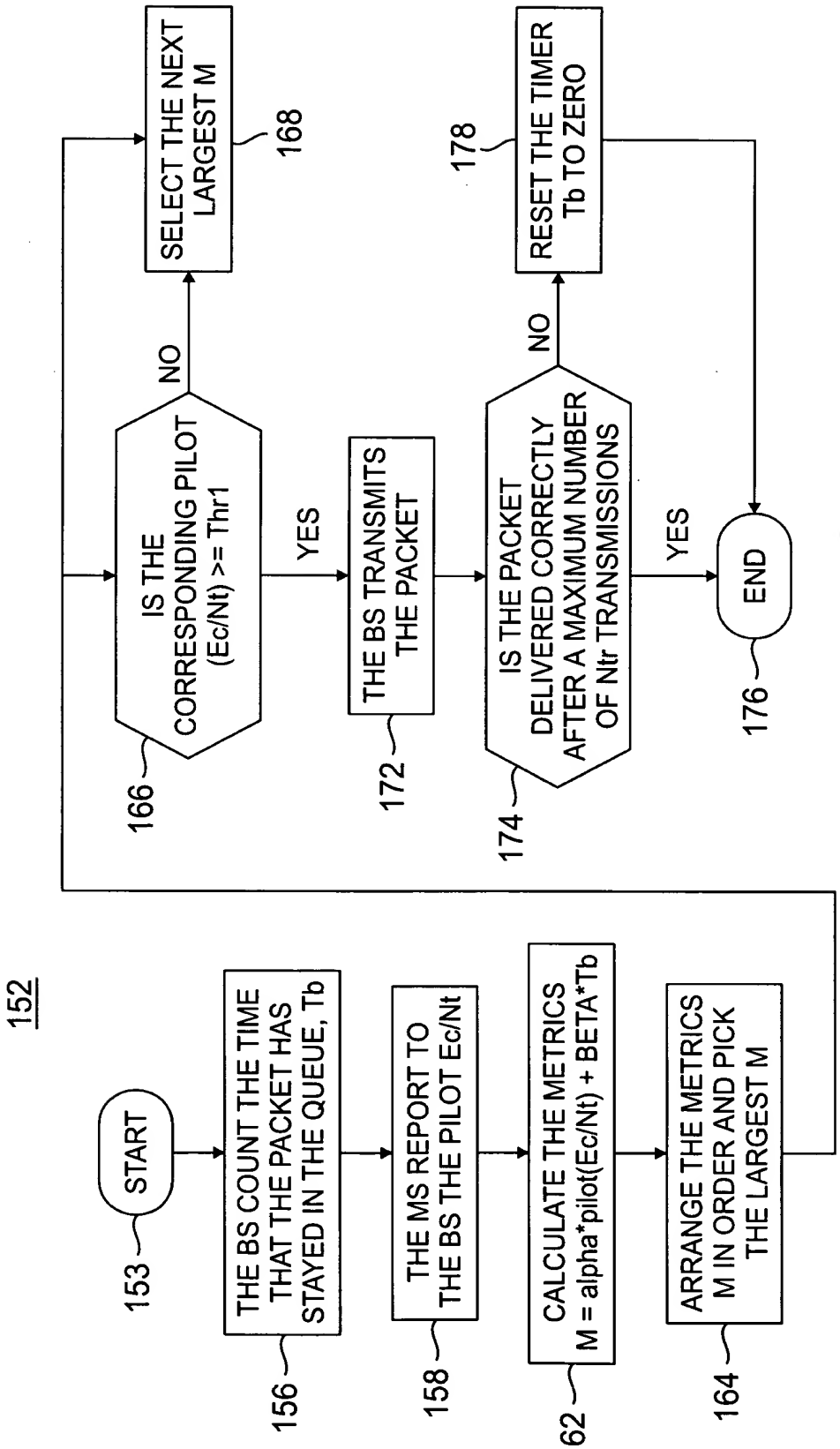
152
START
153
THE BS COUNT THE TIME THAT THE PACKET HAS STAYED IN THE QUEUE, Tb
156
THE MS REPORT TO THE BS THE PILOT Ec/Nt
158
CALCULATE THE METRICS M = alpha*pilot(Ec/Nt) + BETA*Tb
162
ARRANGE THE METRICS M IN ORDER AND PICK THE LARGEST M
164
IS THE CORRESPONDING PILOT (Ec/Nt) >= Thr1
166
NO
SELECT THE NEXT LARGEST M
168
YES
THE BS TRANSMITS THE PACKET
172
IS THE PACKET DELIVERED CORRECTLY AFTER A MAXIMUM NUMBER OF Ntr TRANSMISSIONS
174
NO
RESET THE TIMER Tb TO ZERO
178
YES
END
176

FIG. 4